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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,949	04/16/2004	Stephen K. Pinto	17146-0005001	1606
26161	7590	03/22/2010	EXAMINER	
FISH & RICHARDSON PC			GAMI, TEJAL	
P.O. BOX 1022				
MINNEAPOLIS, MN 55440-1022			ART UNIT	PAPER NUMBER
			2121	
			NOTIFICATION DATE	DELIVERY MODE
			03/22/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/826,949	PINTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	TEJAL J. GAM	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 15 December 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-9 and 13 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-9 and 13 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/15/09, 04/01/09, 03/10/09, 02/24/10</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

1. This office action is responsive to an ELECTION/RESTRICTION entered December 15, 2009 for the patent application 10/826949.

***Election/Restrictions***

2. Applicant's election **without** traverse of Claims 1-9 and 13 in the reply filed on December 15, 2009 is acknowledged.

Claims 10-12 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

***Status of Claims***

3. As a response to an election/restriction requirement, Claims 10-12 were withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention.

Claims 1-9 and 13 now remain under consideration in this Office action. Applicant is reminded that the non-elected claims 10-12 must be canceled from this application if the office finds that the claims 1-9 and 13 under consideration are allowable and the application in condition for allowance.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Bounsaythip and Rinta-Runsala "Overview of Data Mining for Customer Behavior Modeling" - Finland: VTT Information Technology, Research Report TTE1-18, 2001 (hereinafter "Bounsaythip").

**As to independent claim 1**, Bounsaythip discloses a machine-based method comprising receiving historical (see Page 7, Figure 3) multi-dimensional data representing multiple variables (e.g., multi-dimensional) (see Page 13, Section 3.3.1 Definition; and Page 44, Checkpoint 5), transforming variables into one or more predictive variables (e.g., predictive model) (see Page 8, Section 2.4.1 Data sampling), including Bayesian renormalized variables (see Page 32, Section 3.8 Other data mining methods; and Page 18, Section 3.4.4 Advantages/Disadvantages), linearly transformed and non-linearly transformed variables and imputed missing values for categorical or continuous variables (e.g., classification and regression) (see Page 11, Classification and Regression), transforming the variables into the Bayesian renormalized variables (e.g., normalized between 0 and 1) (see Page 18, Section 3.4.4 Advantages/Disadvantages) including adjusting a response frequency associated with a variable by a Bayesian analysis based on a priori response frequency associated with

the variable (e.g., APrioriAll algorithm) (see Pages 25-27, Section 3.6.3 Algorithm and 3.6.4 Illustration), pruning variables for which the data is sparse or missing (e.g., pruning) (see Page 19, Section 3.5.2 Tree induction), adjusting a population of variables to represent main effects exhibited by the data and significant interaction and non-linear effects exhibited by the data (e.g., data mining to visualize non-linear interaction of variables) (see Page 10, First two Paragraphs), and using the adjusted population of variables to generate a predictive model for interacting with a commercial system (e.g., build the model to predict) (see Page 7, Section 2.4 Model building).

**As to dependent claim 2**, Bounsaythip teaches the method of claim 1 in which adjusting the population of variables to represent interaction effects includes stages of main effect interactions, main effects with main effect interactions and excluded variable interactions, and main effects with main effect interactions and excluded variable interactions together with excluded variable combined interactions (e.g., visualizing multiple interactions) (see Page 14, Section 3.3.3 Advantages/Disadvantages).

**As to dependent claim 3**, Bounsaythip teaches the method of claim 1 in which the predictive model predicts behavior (e.g., patterns of behavior) of a current customer with respect to retention of a current service or product of a vendor (e.g., customers products and services) (see Page 11, Association and sequencing).

**As to dependent claim 4**, Bounsaythip teaches the method of claim 1 in which the predictive model predicts behavior of a current customer with respect to risk of asserting claims, loan payment or prepayment to a vendor (e.g., loan) (see Page 17, Section 3.4.3 Illustration).

**As to dependent claim 5**, Bounsaythip teaches the method of claim 1 in which the predictive model predicts behavior of a current customer with respect to usage of a current service or product of a vendor (e.g., customers products and services) (see Page 11, Association and sequencing).

**As to dependent claim 6**, Bounsaythip teaches the method of claim 1 also including enabling a user to reconstruct a sequence of choices involved in the creation of the predictive model (e.g., discovered sequence) (see Page 35, Section 4.1.2 Customer retention with sequential patterns).

**As to dependent claim 7**, Bounsaythip teaches the method of claim 1, further comprising enabling a user to interactively manage a sequence of steps for adjusting the population of variables through a graphical user interface (e.g., graphical user interface) (see Page 14, Section 3.3.3 Advantages/Disadvantages), the sequence of steps including at least two or more steps (e.g., dimension reduction) (see Page 6, Last Paragraph continuing to Page 7), and the graphical user interface including an activation portion (e.g., build) (see Page 7, Section 2.4 Model building), which upon activation, enables the user to revisit at least one of the steps (see Page 6 and 8, Section 2.3.3 Data preparation & 2.4.1 Data sampling).

**As to dependent claim 8**, Bounsaythip teaches the method of claim 1 in which the predictive model predicts behavior of prospective or current customers of a vendor with respect to products or services offered by the vendor (e.g., customers products and services) (see Page 11, Association and sequencing).

**As to dependent claim 9**, Bounsaythip teaches the method of claim 1 in which the predictive model predicts behavior of a prospective or current customer with respect to purchase of a product or service of a vendor (e.g., customers products and services) (see Page 11, Association and sequencing).

**As to dependent claim 13**, Bounsaythip teaches the method of claim 7 further comprising enabling the user to control staging of a sequence of model generation activities through the user interface (e.g., generate models) (see Page ii; and Pages 7-8, 2.4 Model Building & 2.4.1 Data sampling).

### ***Response to Arguments***

6. Applicant's amendment and arguments filed March 10, 2009 have been fully considered. The amendment does not overcome the original art rejection and the arguments are not persuasive. The following are the Examiner's observations in regard thereto.

#### **Applicant Argues:**

The applicant disagrees with the rejection based on such an artificial combination of two unrelated single words at different points in the reference. In Bounsaythip, neither the word "Bayesian" or the word "normalized", alone or in combination, described or would have made obvious the "Bayesian renormalized variables" recited in claim 1.

#### **Examiner Responds:**

Examiner is not persuaded. The prior art clearly teaches normalizing values between 0 and 1; and the prior art clearly teaches various methods of data mining. An example of

the normalizing given on Page 6 is normalizing values for neural networks. Clearly, this is an example and can be applied to the numerous other methods of data mining (e.g., decision trees, Naïve-Bayes, nearest neighbor) (see Page 11) taught in the prior art. Under such consideration, the prior art anticipates transforming variables into more predictive variables that include Bayesian renormalized variables.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tejal J. Gami whose telephone number is (571) 270-1035. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Albert DeCady/  
Supervisory Patent Examiner, Art  
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/TJG/